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The Vice Chancellor directed that the policy should be held as a security for what the tenant for life might ultimately be liable to contribute; and, as it was a participating policy, the decree was doubtless correct; for the premium was not in this case the exact measure of the annual contributions, but was in excess, the result of which, namely the bonus, ought always to be divisible in proportion to the actual payments made towards it.

As to the proposition of waiting until the death of the cestui-que-vie to fix the proportions, such an arrangement (which has never, in fact, been suggested in practice) would be liable to this insuperable objection, that it might prevent the complete winding up of the affairs of a deceased tenant for life for a quarter or even more than half a century.

Difficult as the settlement of such cases as that now under consideration proves itself, it will not escape the professional reader that under the new Chancery statutes they are more likely to obtain a correct solution than formerly, since their determination, instead of being referred to the Master and reconsidered in Court under the light of precedent alone, will now be settled by the Judge in Chambers, who will, it may be presumed, avail himself of that competent professional aid suggested by the Masters in Chancery Abolition Act,\* and call to his assistance a professional actuary.

*Opinions of an American Writer on Modes of Valuation.*

THE following remarks, extracted from Mr. Harvey Tuckett's *Monthly Insurance Journal*, published in Philadelphia, are so much to the purpose, that our readers will no doubt readily accede to the insertion of them in this Magazine, particularly as the above named gentleman's publication is at present not accessible to very many persons in this country.

Mr. Tuckett gives a long report of the proceedings at the Meeting of the Institute of Actuaries held on the 31st January last, and in the leading article of his *Journal* comments upon them as follows:—

these amounts, as before, obviously depend upon the value of  $c_{40}$ . Should it have greatly deteriorated, it may be only in fact  $= c_{70}$ , against which risk the tenant for life may put the chance of  $c$ 's dying in his lifetime = the single premium of a survivorship insurance on the life of  $c$  against his own for the amount  $F$ ; so that the arrangement would be only a balance of injustice.

\* 15 & 16 Vict., c. 80, s. 42. See *Mildmay v. Lord Methuen*, 1 Drew, 217.

“We would beg the attention of our readers to the proceedings of the Institute of Actuaries, held at their rooms, St. James’ Square, London, on the 31st of January, a report of which is to be found at length on another page, and will well reward a perusal. The question for discussion was the determination and division of surplus in Life Insurance Companies, affording an opportunity to many most eminent actuaries to express their opinions.

“There is no subject of greater importance to the whole body of insurers than a just estimate of the actual dividend-giving power possessed by Life Insurance Companies. If once the public have ascertained and are convinced of the actual limit of this power, all promises of enormous benefits to be bestowed will evaporate before the good sense of the community. Hitherto the plan on which the computations have been made have kept the public in the dark as to the actual state of their affairs; but, by the system which we have always urged, and which we now find meeting the approval of these distinguished actuaries, the public will have the means of judging for themselves.

“We have often explained to our readers the construction of a life insurance premium, as charged to the insurer (see vol. i., p. 29), framed in accordance with a true table (see vol. i., p. 54, 2d col.), as the Carlisle and General Experience are termed. We have shown them that it is formed of two parts, viz.—the net premium, or exact amount which each person would have to contribute, in accordance with the ‘tables,’ in order to pay the last life the sum contracted for; and, secondly, the ‘marginal addition,’ or the percentage added to meet the expenses and contingencies of the Company. The first portion, or net premium, is a trust, with which there should be no interference without a close and thorough examination at deferred periods of considerable length; the second, or ‘marginal addition,’ is the available part after the expenses and contingencies are ascertained, which contains the bonus or dividend-giving power.

“We are sorry, with a learned body like the Institute of Actuaries, that they have not fixed an arbitrary term for this ‘marginal addition,’ instead of each speaker using in the course of the discussion some different expression to designate this portion of the premium, though the so doing perhaps more clearly shows its importance.

“Mr. Jellicoe calls it the bonus-giving power of a Society—‘the provision for the future surplus and expenses.’ ‘That portion (of premium) required to provide for future contingencies.’ ‘The

present value of this item appearing on the other side as the guarantee fund.' 'Marginal difference.' 'Marginal excess.'

"Mr. Pinckard calls it 'Profits in anticipation.'

"Mr. Reddish—'The loading intended to provide for expenses and profits.' 'The expense of collecting the premiums.' 'The present value of the loading.'

"Mr. Jenkin Jones—'Additions to the pure premiums.' 'Marginal guarantee.'

"Mr. William Thomas Thomson—'The loading; that is, the difference between the net premium on a true table and the gross premium.' 'Reserve guarantee.' 'Excess of premium'; or 'By whatever name you may call it.'

"In the United States, the Carlisle Table at four per cent. interest has been almost invariably used as that upon which the true or net premium is calculated; therefore, as regards the insurer, all are equal in reference to the basis. In those Companies charging the full premiums, or, 2.36 dollars at 30 years of age, the 'marginal addition' is  $33\frac{1}{3}$  per cent. added, or 25 per cent. discounted. Now this sum has to provide for all the necessities above described, before the insurer has a right to any dividend for savings, or before any can be granted to him without trenching on the more important deposit—the true premium. If, therefore, the calculations and statements offered to the insurers only give the calculations on the net premium, the account of a low priced Office will show the same results as those of a high premium Office—both being based upon the same original table; but if the present value of the 'marginal additions' appear on both sides of the account, and not on one side only, it is obvious an account so prepared would produce the same result as one formed from the net premium on each side, with the advantage of its being seen what provision the 'marginal additions' made for expenses. This latter method of valuation being adopted, and the insurer aware of the exact value of the 'marginal additions' (never exceeding 25 per cent.), a little good sense would demonstrate to him the real amount of bonus or dividend, after paying expenses, which could be granted, without trenching upon the insurance fund, composed of the net premium and its interest.

"The great error, and one which has given rise to the fallacious dividends granted, has been a concealment from the public generally that the gross premium is composed of two different sums—the one the net premium, calculated at an assumed rate of interest, from a true table, to pay the deaths; the other the 'marginal additions,'

or per centage added to pay all current expenses, correct all errors, form a guarantee fund, and afford a dividend !

“Up to the year 1825, there were only 37 Life Companies in Great Britain ; in 1839 these had increased to 67 ; and in 1851, to 152 Companies. In the earlier stages the science of the actuary was unquestioned, and competition unnecessary ; but since 1843, as the latter has become greater the former has become more diffused ; and the necessity which has obliged so many Offices to close their business has caused legal inquiries into the principles on which they were based—the dividends how granted—and an improved demand for the services of the actuary in all the necessary valuations. Thence the actuaries have been ‘divided into two schools (as Mr. Farren observes), the Old and the New—not to be confounded with the term old and new as applied to Companies, for an old Company may be directed by an actuary of the new school, and the reverse.’ The actuary of the old school kept the public in the dark ; he of the new school affords the means of judging, as the only safe protection against the errors engendered by too great a competition.”

It is scarcely necessary, one would think, to say more than has now been urged upon this subject ; but we may take the present opportunity to offer one additional reason why the practice of omitting the “marginal additions” in making valuations must be considered to have a somewhat dangerous tendency.

Let us suppose a Company to be in the receipt of an income from premiums of £100,000 per annum, and that its business was commenced with rates supposed to be equal in every case to the risk, a marginal addition of 25 per cent. being made to them throughout. The portion of income required in such case for the sums assured merely would hence be £80,000, and the remaining £20,000 per annum would be the provision for extra contingencies.

Let us now imagine an investigation to be made as to the real rate of mortality prevailing, and that it be found that, in lieu of the rate originally assumed being borne out, a certain increased one is proved to obtain, the premiums based upon which would make it necessary to devote £90,000 instead of £80,000 per annum to meet the risks ; the surplus income being thus reduced to £10,000 per annum only, instead of £20,000. Now, as the change in the rate of premium consequent upon that in the rate of mortality is not immediately apparent, this reduction in the surplus income is not unlikely to escape observation where the net premiums alone are valued, and matters in this way might be allowed to go on as if no such reduction had taken place—a state of things impossible to

be, where the same or nearly the same proportion of the value of the net premiums is always retained. In short, it cannot be too carefully borne in mind that the only means we have in this business of judging as to the future must be derived from a vigilant observation of what has taken place in circumstances as nearly as possible of a similar character, and that thus it behoves us to make from time to time investigations with this object, and to effect such changes in the provision for future liabilities as may thereupon be found necessary, taking care to retain the same or as nearly the same proportionate margin as practicable, to guard against those fluctuations which we know may occur, let the measures based upon our knowledge of the past be as accurate and judicious as they may. We thus virtually exercise a power of raising or depressing the future premiums as the necessities of the case may demand; or, what is the same thing, we increase or diminish the returns of surplus in obedience to the dictates of our experience and in accordance with the law which regulates it, fulfilling in this way, and obviously in the proper manner, the very objects with which the marginal additions were originally made.—ED. A. M.

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*Assurance Association of Germany.*

IN the January number of the *Rundschau der Versicherungen* was given an account of a meeting of the representatives of the Fire Assurance Companies of Germany, held at Leipzig, for the purpose of forming an Association. The object of this union will be seen in the following statement, which appeared in the number of the above work for March:—

“MEETING AT LEIPZIG, 13 DECEMBER, 1852.

“*Present—*

- “HERR HOFRATH BECKER, from Gotha, Manager of the Feuerversicherungs Bank fur Deutschland, in Gotha.
- “HERR GENERAL CONSUL LEMONIUS, from Stettin, Manager of the Preuss. National Versicherungs-Gesellschaft, in Stettin.
- “HERR DIRECTOR KUNTZE, of Leipzig, of the Leipziger Feuerversicherungs Anstalt.
- “HERR RENT-AMTMANN BRUNNER, of Leipzig.
- “HERR DR. SCHULTZE, of Leipzig, Manager of the Brandversicherungs Bank fur Deutschland, in Leipzig.
- “HERR FRIED. KNÖBLAUCH, from Magdeburg, General Manager of the Magdeburger Feuerversicherungs Gesellschaft; also specially appointed Representative of the Schlesischen Feuerversicherungs Gesellschaft, in Breslau.

“At a Committee for the formation of an Assurance Association of Germany, the Magdeburg Fire Insurance Company was selected